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## Instrumental colour evaluation and visual consumer study of commercial beverages made with fruit juice and milk

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### Introduction

The aim of this work was to analyze colour of beverages formulated with milk and fruit by image analysis and study consumers' acceptance of their colour.

### Material and Methods

**Samples:** 16 commercially available beverages formulated with milk and fruits were analysed by

*Image analysis* (DIA), and DigiFood software was used to calculate the CIELAB coordinates.

**Consumer study:** 100 panellists were recruited among students (20-30), a group of population which is potential consumer of these products. They were asked to evaluate how much they liked the appearance of the beverages (from 'Dislike extremely' to 'Like extremely'), just by looking at the samples. They were also asked about their consumption habits in relation to these beverages and demographic characteristics.

### Results and discussion

Results obtained from DIA showed CIELAB values ranging from 61.75 to 90.91 for lightness ( $L^*$ ), 21.55 to 57.52 for chrome ( $C^*_{ab}$ ) and 52.58 to 87.91 for hue ( $h_{ab}$ ), showing the wide variety of hues in the beverages available in the market.

85% of consumers considered these products as beneficial, and 70% consumed them quite often (39% did so two or more times per week). Participants who did not use to consume these beverages stated that they did not like them (63%), or they preferred other beverages, such as natural juices (20%).

Results of the consumer study showed that participants preferred samples with orangish appearance instead of those with a whiter look. Anyway, punctuations given by the consumers suggest that generally, colour of these products is not highly evaluated, as the best mean punctuation was 6.62. Correlation between consumer acceptance and colour parameters showed that hue and chroma were the colour parameters which significantly correlated with consumer acceptance.

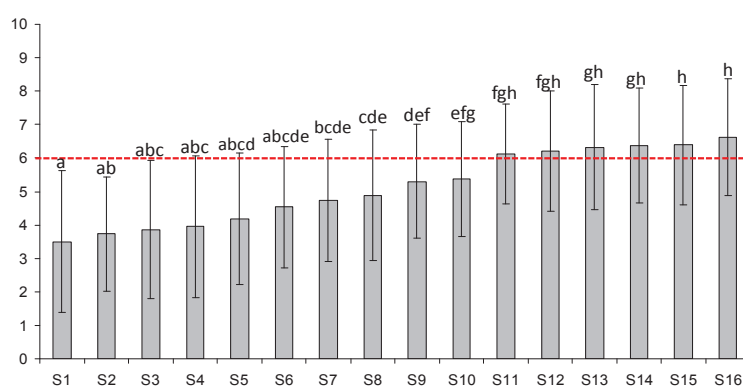


Figure 1. Mean appearance scores given by consumers.

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